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# OPERATIONS FOR CATARACT.

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I HAVE been repeatedly asked by medical officers in S. India, why, in view of the fact that I have not changed my methods, I have taken no part in the controversy raised by Major Smith's interesting papers. My reason has been that I have preferred to look on and listen. As the Editor of the *Indian Medical Gazette* has definitely asked me to state my views, I feel that were I not to do so, it might be thought that I felt there was only one side to the case, which is very far from being my position.

The essential point in the whole controversy is to ascertain whether the advantages of the intra-capsular method outweigh what some of us at least conceive to be its drawbacks. On this matter my mind is far from being made up. I think with many others that Major Smith has made a strong case, and with all alike I admire his energy and enthusiasm. What I do take exception to, is the fact that he has

supported his contention by statements which, so far as my experience goes at least, are decidedly incorrect. I have no desire to lose the main issue in a mass of verbiage, but I cannot, while dealing with the subject, allow some of the statements to pass unchallenged, lest others should think that they are *ipso facto* accepted. I will, therefore, take up these in turn. I am referring to Major Smith's paper published in the September 1905 number of this journal. The italics are my own throughout. Major Smith says: "The vitreous seems to repair as well as any other tissue, and why should it not?"

It could not fail to be of interest if the writer of those lines would publish the grounds for his opinion. The Duke Charles of Bavaria, Dr. Hæmers of Ghent and others have endeavoured to prove that a true regeneration of lost vitreous can and does occur. I think I am in accord with the majority of ophthalmologists, when I say that their writings have left us unconvinced, much as we should like to believe them. That a fluid exudation takes place (possibly from the retina as Hæmers maintains), and thus re-establishes the tension of the eye, no one doubts, but unless Major Smith has some new light to shed on the subject, I think he will find that the verdict of ophthalmologists will be "non-proven." As a contribution to the argument on the other side, one may quote Parsons'\* words: "The vitreous is an inert jelly-like structure, which subserves optical functions. In pathological conditions, so far as is known, it is purely passive. It is, therefore, advisable

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\* Ref. Archives d'ophtalmologie Tome vingt-troisième, pp. 103, *et seq.*

The Pathology of the Eye, Vol. II, p. 428; J. Herbert Parsons.

to avoid such expressions as 'shrinking of the vitreous,' etc., which imply an activity which it does not possess; and it is incorrect to use such terms as hyalitis, etc." It is difficult to believe that such a structure would be easily replaced, if lost.

Major Smith admits that escape of vitreous is "much dreaded," but he states that he has "seldom seen evil consequences from it." There is no question that this accident is much dreaded. I had the opportunity of discussing it with many of the leading ophthalmologists of Europe, and there could be no doubt of their attitude. Be it remembered that European surgeons work under very different conditions from ours. They can follow a very large percentage of the cases that they operate on for years, and they make a point of so doing. Major Smith lays great stress on our enormous opportunities and our vast experience, but it is to be remembered that what we gain on the one hand we lose on the other. How many of his cases of vitreous escape has Major Smith followed up for a period of five years? With the best wish to do so, I find it very hard to follow any large percentage of my Indian patients, but I have been struck with the number of blind eyes I see from old operations, in which the characteristic upward displacement of the pupil indicates that the hyaloid membrane was ruptured at the time of the operation. These observations have confirmed me in a profound respect for the dread in which European surgeons hold a vitreous escape. If Major Smith can tell us that he has kept a number of cases of vitreous escape under ophthalmoscopic observation for months or years, and that he had not observed the formation of bands in the vitreous, detachment of the retina

or other evil consequences, his evidence will be epoch-making.

Major Smith says: "I do not draw a distinction between irritation of the iris and iritis; I call then both iritis," and again: "The iritis following cataract extractions is, in my opinion, *due to the fact that lens-matter and capsule have been left behind.*" He endorses Macnamara's opinion that "most of our failures in extraction are due to the fact of soft lenticular matter and capsule being left in the eye after removal of the lens."

With the above views I find myself at variance. I make a very great distinction between "iritis," which I believe to be practically invariably septic in origin, and irritation of the iris. In the former case one finds the characteristic signs and symptoms of inflammation of the iris, either in a mild or in a more or less severe form. On the other hand one has only to refer to one's notebooks to find cases in which it is recorded that the iris shows signs of adhesions between it and the deeper-lying structures, whilst there is no pain, no photophobia, no circum-corneal injection, no dimming of the iris details, and whilst the patient has excellent vision. In fact every sign of iritis is absent; and what we have to do with is a plastic exudation from the lower surface of the iris brought about by contact between that membrane and either a raw edge of capsule or a fragment of cortex which apparently by virtue of its consistency cannot be readily absorbed. One operates on not a few cases in which it is not possible to wash the chamber clear of all cortex, although one is able to greatly diminish the amount left behind.

In such cases I frequently demonstrate to my students that if the cortex left swells up readily



by the imbibition of fluid and assumes a gelatinous appearance, one need have no fear of iritic adhesions. Nor need one fear if the rent in the capsule and the exposed cortex lie within the circle of the dilated pupil. It is when the freshly-torn capsule edges, or when masses of stiff cortex, lie in contact with the membrane that one has to push the effect of one's mydriatic. At the present time in my hospital I have a case in which a sector of cortex  $\frac{1}{4}$  the lens in area was left owing to the restlessness of the patient contra-indicating farther irrigation, and yet the iris lying over it has contracted no adhesions whatever, owing to the capsule rent lying within the circle of the pupil.

Again, I am prepared to demonstrate almost any day in hospital that cortex may be left behind, may set up local adhesions, and yet may in no way interfere with the steady progress of the case, if mydriatics are used. In Macnamara's time less was known than now of asepsis, and failures were attributed to other causes which should have been set down to septic infection of the eye. When serious inflammation occurs in an eye after operation, one may safely assume either that there has been an infection, or that some fragment of capsule has been caught in the section, provided always that the patient was in good health before operation. There is another point to bear in mind. It is always possible that a mild infection of an eye may take place during operation, and that the eye so infected may be able easily to cope with the pathogenic organisms engrafted on it, so long as no extra strain is imposed on its powers of repair. But if a mass of cortex happens to be left in the eye, and especially if that cortex is stiff and unyielding, an additional burden is imposed on the absorptive powers of

the eye. Again, it is readily conceivable that a similar strain may be imposed on the eye by the drag of an impacted portion of iris or capsule or by excessive bruising of the iris by a hard, bulky line during delivery. Such complications may suffice to turn the scale against an organ, which under happier conditions might easily have worked out its own salvation. If this is what Major Smith means, there will be no difficulty in agreeing with him ; but it is quite a different position to take up from that which assumes that the iritis "is due to the fact that lens-matter and capsule have been left behind." Such a statement throws the whole responsibility on the leaving behind of cortical matter and capsule.

It is possible that I have misunderstood Major Smith, and that we are more in accord than his words have led me to think. To come now to the evidence to be derived from some recent figures derived from my hospital cases. In the last 200 cases of cataract extraction performed in the G. O. Hospital, Madras, cortex is noted as having been left behind in 63 cases, *i.e.*, in 31·5 per cent. I admit that the quantity was usually very small, but sometimes the amount was considerable. In these 63 cases only three showed signs of iritis, *i.e.*, 1·5 per cent of the total number under review. Again, in 810 cases operated on in the hospital during 1905, I find that cortex was left behind in 188, or in 23·2 per cent, whilst in only nine of these was there iritis discovered, *i.e.*, in 1·1 per cent of the total number.

We may consider the 200 cases from another point of view, and divide them into two classes—those in which cortex was left, and those in which it was not so left. In the whole 200 cases there were five cases of iritis, *viz.*, three in the



first group and two in the second. In none was the iritis severe. Taking the percentages of iritis in each group separately on the group-numbers, they stand at 4·3 per cent and 1·5 per cent nearly.

I think that these figures support my contention that, when the chamber is irrigated, left cortex does not necessarily or even very frequently give rise to iritis. We have obviously to look farther for the true cause of this complication. On the other hand the explanation I have already offered is consistent with all the facts stated.

I most cordially agree with Major Smith that to leave more cortex in the eye than one can help, is a great mistake, and to that end I use irrigation and push it to very considerable lengths. Furthermore, I invariably remove any floating pieces of capsule I can see with a pair of iris forceps after the chamber has been washed clear. In the last 200 cases I find I removed fragments of capsule 30 times with a slight escape of vitreous in five. In the remaining 170 cases there were five other slight escapes. In no case was more than one or two drops lost. Though this manœuvre has thus doubled my vitreous loss, it is to be taken into account that it is a much less dangerous proceeding than the expression of a lens in its capsule, inasmuch as it is quite easy to limit the vitreous escape by at once closing the eye as soon as danger threatens. The lens being out, this is of course possible. Whether even this additional risk is worth one's while running, is a matter I am very seriously considering. Again, Major Smith says: "By extraction in the capsule we practically eliminate iritis and after-cataract . . . . An eye in which there has been iritis after cataract extraction, *never* recovers to be as good as if it had not occurred."

To take the last statement first. I have notes of a case in which I operated in 1896. The patient was a wealthy man of high caste. He removed all bandages and rubbed his eye the day after operation, with the result that he suffered from a very acute iritis. Under active treatment this subsided leaving the patient with practically full normal vision. I saw him again in 1905, and his eye had never given him any trouble in the interval. I could quote other cases, but none which I have been able to watch for so long a period. I do not mean for a moment to deny that iritis after extraction is a great misfortune, but I take exception to the sweeping nature of Major Smith's statement. With the question of the influence of left cortex on the incidence of iritis, I have already dealt.

As to after-cataract, I admit that it is an evil, but it is not, to my mind at least, as serious an evil as Major Smith contends. In the last 200 cases operated on in my hospital (of which statistics are available), I find that I have resorted to a second operation (discission with two needles) on four occasions so far. Doubtless, more will come back later on for the same operation. Again, whilst in 1905 I extracted 810 cataracts in hospital, the number of discissions for the same period stands at 75. In not one of these cases was there any bad result. I wait a month after extraction, and then take the same precautions for asepsis, etc., as if I were performing an extraction. The eye is kept bandaged for two days, and under the influence of atropine for ten days.

It is true that if we were dealing with a more intelligent class of patients, our percentage of after-cataract operations would probably show a decided increase on our present figures ;

but I repeat, and I say it after a large experience of the two-needle method, that I do not fear capsule-laceration operations carried out under the conditions I have indicated above. I am alluding to the after-cataracts due to left capsule, and not to those due to inflammatory reaction. The treatment of the latter opens up quite another question, into which we need not enter here.

I, therefore, disagree with Major Smith's opinion that "to deal with an after-cataract is as serious as to extract a cataract in its capsule, if not more so." He goes on to say: "The eye *in which capsule has been left*, whether iritis has occurred or not, and whether the capsule has been needled or not, is *liable to inflammatory reaction of a serious nature on slight provocation* ..... the capsule is injured and it *behaves on slight causes as a foreign body*. When the lens has been extracted in its capsule, the eye is no more subject to this liability to internal inflammation than is a normal eye."

I have been able to follow for many years a considerable number of my cases in which the lens has been extracted in capsule. I admit that the cases so followed have been only a percentage of the whole number operated on. It must, nevertheless, count for something that in uncomplicated cases I have seen no tendency to the inflammations of which Major Smith writes. It is true that in a few cases, especially where the chamber has not been cleared of cortex, a capsule becomes more opaque than it was at first, and requires discission with two needles, but this is a minor matter, and one which gives me no anxiety. Will Major Smith give us statistics of the cases in which he has noted these "internal inflammations" of the eye following the extrac-

tion of the lens by the capsule-laceration method? It would be interesting to learn whether in these cases there was any question of the capsule having been caught in the section, or of the iris having been impacted therein. Also, was there any inflammation of the eye at the time of convalescence from the operation? I have not infrequently seen eyes operated on for cataract go wrong within the next two or three years, but there has always been evidence of an imperfect operation, vitreous escape, impacted capsule and iris, or post-operative iritis.

It has long been recognised that the inclusion of fragments of capsule in the margins of the wound is a prolific source of deep-seated inflammations during the after-course of a cataract operation. If the whole capsule is removed, it is obvious that this danger is eliminated. Whether a new risk, in the shape of impacted vitreous is placed in its stead, must be a matter of experience.

If Major Smith will reconsider his position, and state a claim that by the intra-capsular method he removes (1) the dangers of IMPACTED capsule, and (2) the burden thrown on an eye already trembling in the balance by the strain of absorbing left cortex, it will then be possible to agree with him. The main question will still remain, whether what he gains on the one hand he does not lose on the other. To this I shall revert later. That the dangers of iritis are not great when the old method is carefully performed with the aid of irrigation, I have already shown, inasmuch as 200 cases only yielded me 2·5 per cent of this complication. Of these five cases two obtained good vision and only three can be counted as partial successes.



Again, Major Smith says: "By extraction in the capsule, no instrument or douche need be inserted to remove lens-matter from the interior of the eye, *the cause of the striped keratitis* we hear of and other complications."

Since I have resorted to irrigation—and I employ it with no sparing hand—one of the most satisfactory features of the after-course has been the large number of clear black eyes obtained. Such eyes look as if the lens had been extracted capsule and all, and the cornea is as clear as it is in health in a very large percentage of cases. In 750 cases published by me in the *Lancet* { Nov. 8th, 1902 } in which irrigation { May 2nd, 1903 } had been employed, keratitis, mostly *very slight* in degree, was recorded in less than 12 per cent. Again, in the last 200 cases operated on by me by the same method, the figure for keratitis stands at 14 per cent.

These results, which are better than I ever obtained before I took to irrigation, will, I think, refute Major Smith's statement as to the douche being "the cause of striped keratitis."

Again, Major Smith says: "By extraction in the capsule, vision is *necessarily* more acute than when capsule is left behind. Capsule left behind is *invariably* an after-cataract *varying only in degree of density*."

Again I challenge these statements. If the capsule is freely lacerated centrally at the operation for extraction, the margins of the anterior layer recede and leave a clear central pupil in a large percentage of cases. Moreover, as I have already said, it is possible, with a little practice, and granted a fair amount of manipulative skill, to remove any floating portions of capsule from the pupillary area.

The posterior layer of the capsule comparatively seldom gives trouble. If it does so, it can be easily needled.

In my last 200 cases vision was tested on the 9th to the 14th days. In 33 cases or in 16·5 per cent, it was possible to re-test vision at a later date. This date varied from the 19th to the 60th day; the average was 33 days. The final visual results as shown by E types, and by types for the illiterate, were as follows: in 3 per cent 6/6; in 3 per cent 6/8; in 16 per cent 6/12; in 21·5 per cent 6/18; in 24·5 per cent 6/24; in 14·5 per cent 6/36; in 6·5 per cent 6/60; in 8 per cent from 4/50 to 1/50; 1·5 per cent could do no more than count fingers; and in 1·5 per cent vision was lost. Of the re-examined cases 10 remained stationary, 2 receded in vision owing to accidents, and 21 showed a steady improvement. Had it been possible to re-test a larger percentage, it can hardly be doubted that the results would have been greatly improved, but it is very hard to follow any large number of one's Indian cases. Arguing from my private cases, I should say that it takes usually six weeks to three months before the best vision is attained. As it was at this early date 89 per cent had obtained a vision from  $\frac{1}{1}$  to  $\frac{1}{10}$ ; 8 per cent from  $\frac{4}{50}$  to  $\frac{1}{50}$ ; 1·5 per cent could count fingers and 1·5 per cent were failures.

Five cases out of 200 obtained 6/6 vision by the 17th day and one on the 40th day. It is noteworthy that in not one of these cases was the whole capsule extracted, and in only one of them was even a fragment extracted. These figures are in direct contradiction to Major Smith's statement that "by extraction in the capsule, vision is *necessarily* more acute than when capsule is left behind," for it is difficult to expect a better



result than 6/6. If Major Smith means that "on the average vision is likely to be more acute," that is quite another position, but it must be supported by carefully drawn up statistics, which will admit of comparison with those of other workers who employ the capsule-laceration method. The last half of the same para. is also open to criticism. I do not admit that "capsule left behind is *invariably an after-cataract, varying only in degree of density.*" For any one who has examined many such cases after operation with the ophthalmoscope, or better still with an electric loupe, is familiar with the fact that one can classify the eyes into three categories: (1) those in which no definite capsule can be seen in the area of the pupil even under very careful examination; (2) those in which a definite capsule can be seen but with a clear central or para-central aperture; and (3) those in which a definite membrane can be seen right across the pupil.

Why should we assume that the capsule of a cataract is *necessarily* itself opaque? So far as regards the anterior portion I admit it often is, but as I have already pointed out free laceration obviates this disadvantage in many cases. As to the posterior capsule, any one who uses the capsule laceration method knows that after extraction it is often invisible, even when very carefully looked for.

Major Smith claims to have obtained 99·27 per cent of first-class results. Will he tell us what he means by first-class results? Jessop in his text-book, p. 237, reflecting London opinion, says: "An operation is said to be a success, when with glasses the vision is at least 6/36; a partial success when the vision is less than 6/60, and at least large objects, and a failure, if there is only

perception of light." Major Smith has assumed that the profession is opposed to him and his methods. In this he is mistaken. We have in our hands a method of operating (when irrigation is used), which enables us to obtain admittedly excellent results. Major Smith asks us to give that method up in favour of extraction in the capsule. There are two things that make us hesitate: (1) that we have reason to believe that the dangers of vitreous escape are greater than we care to face, and (2) that the statistics put before us are not sufficiently exhaustive to command our conversion to the new method.

To sum up :—

I have in this paper criticised a certain number of Major Smith's statements in the article under consideration, not necessarily because I disagree with his main proposition, but because I consider that these statements, which he has brought forward in support of his case, are, if unanswered, liable to be taken for accurate exposition of the facts. Such an assumption may create a false impression, and lead the younger generation of Indian cataract-operators to think that there is but one side to the question.

As to Major Smith's main proposition—till more evidence is forthcoming in his support, few will hope to attain a 6·8 per cent of vitreous loss, while using the intra-capsular-extraction method. The experience of others all goes to show that the usual loss-rate is *much* higher than this. Farther, till the cases of vitreous escape are followed up in some numbers, and for some considerable time after operation by ophthalmoscopic observation, and till it is thereby proved that the widely entertained fear of this complication is groundless, most surgeons will hesitate

to believe that the risks are as small as Major Smith considers them. Many years ago, I had the opportunity of watching a surgeon, who even then counted his extractions by the thousand, make a trial of the method Major Smith advocates. He told me that he could not keep down his vitreous loss, and that he therefore felt bound to give up the method; and yet he was an operator, who so far as manual skill was concerned, I have never seen beaten anywhere in the world, and I speak after seeing many of the Masters of Europe at work.

In closing, I would ask the younger surgeons to keep an open mind, and to watch the leadings of carefully drawn up statistics. By using the capsule laceration method, combined with irrigation, they have a method of extraction in their hands, which will give satisfaction alike to themselves and to their patients. Let them think twice before they surrender it for another mode, whose dangers are feared by many surgeons, both in Europe and in India. Let them remember that the hyaloid membrane (I am clinically convinced that such a membrane exists) is very thin, and that if we rupture it, even without vitreous escape, we *ipso facto* surrender the integrity of the diaphragm of the eye, which diaphragm is alike a guard against the inroad of infection, and a safeguard to the anatomical equilibrium of the organ. If carefully compiled statistics of the after-course of cases proves that we have erred in our conservatism, it will be time to change our operation, but not before.

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